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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------|-------------|----------------------|---------------------|------------------|
| 10/597,610 | 06/09/2008 | Eric Le Gall | 1001-159 | 3775 |
| 25215 | 7590 | 03/30/2011 | EXAMINER | |
| DOBRUSIN & THENNISCH PC | | | THOMPSON, CAMIE S | |
| 29 W LAWRENCE ST | | | | |
| SUITE 210 | | | ART UNIT | PAPER NUMBER |
| PONTIAC, MI 48342 | | | 1786 | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 03/30/2011 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/597,610 | LE GALL ET AL. |
| | Examiner | Art Unit |
| | Camie S. Thompson | 1786 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Amendment filed 1/14/2011.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 32-53 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 32-37, 41-48, 50 and 51 is/are rejected.

7) Claim(s) 38-40, 49, 52-53 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) Notice of Informal Patent Application

6) Other: _____

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed January 14, 2011 are acknowledged.
2. Examiner acknowledges amended claims 32-51.
3. Examiner acknowledges newly added claims 52-53.
4. The rejection of claims 32-37, 41-48 and 50-51 under 35 U.S.C. 102(b) as being anticipated by FR2356509 is overcome by applicant's amendment.
5. The rejection of claims 33-34, 37, 40 and 42-47 under 35 U.S.C. 102(b) as being anticipated by Sobolev, U.S. Patent Number 5,030,488 is overcome by applicant's amendment.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made./D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1786
7. Claims 32-37, 41-48 and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over FR2356509 (hereinafter "the French reference").

The French reference discloses a sandwich structure comprising a core of plastic foam wherein on both sides of the core is a surface layer that can be a paper sheet, a fiber film or fabric of glass (see abstract). Additionally, the abstract of the French reference discloses that that thickness of the core is approximate 1 to 3 mm and the thickness of the surface layer(s) is 0.2 to 0.4 mm as

required by present claims 32, 34-37, 41-45, and 47-48. The French reference also discloses that the core can comprise an epoxy foam resin with a density of 0.5 to 0.8 g/cm³ as per instant claims 32-33 and 46 (see entire document). The reference also discloses that one surface layer can be a paper sheet and the other surface layer can be a metallic sheet as per instant claim 41. The reference discloses that the sheets are impregnated, dried, superimposed and joined with the core under pressure and heating as per instant claims 50 and 51.

The French reference does not disclose the amount of epoxy resin present in the core. However, this is an optimizable feature. The French reference does disclose that the core must have increased mechanical strength. The French reference also discloses that the core can comprise epoxy resin. The amount of epoxy resin in the core affects the rigidity and strength of the structure. Discovery of optimum values of a result effective variable involves only routine skill in the art in re Boesch, 617 F2.d 272, 205 USPQ 215 (CCPA 1980). Therefore, it would have been obvious to one of ordinary skill in the art to have epoxy resin present in the core in the amount of 15-65 % by weight in order to have a laminate structure that has increased rigidity and strength.

The French reference does not disclose that the composite has a flexural modulus as measured by ASTM D790/ISO 178 from 200 mPa to 700 mPa. The reference discloses that the composite structure is to have increased mechanical properties and strength. The flexural modulus can be optimized by optimizing the weight of the resin in the core as by applicant's admission. Therefore, it would have been obvious to one of ordinary skill in the art to have a composite that has a flexural modulus as measured by ASTM D790/ISO 178 from 200 mPa to 700 mPa in order to have a structure that has increased mechanical properties.

8. Claims 38-40, 49 and 52-53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant claims a composite and a process for manufacturing a composite comprising at least two surface layers attached to a central layer of a rigid epoxy foam wherein the surface layers comprise hollow box structures or concentric tubes . The closest prior art, FR2356509, discloses a sandwich structure comprising a core of plastic foam wherein on both sides of the core is a surface layer that can be a paper sheet, a fiber film or fabric of glass. The French reference fails to teach that the surface layer(s) can comprise hollow box structures or concentric tubes.

Response to Arguments

Applicant's arguments with respect to the present claims have been considered but are moot in view of the new ground(s) of rejection. Applicant has amended claim 32 to include the weight of the epoxy resin. The weight of the epoxy resin in the core is an optimizable feature. The amount of epoxy resin in the core affects the rigidity and strength of the structure. The French reference discloses that the core must have increased mechanical strength. Therefore, it would have been obvious to one of ordinary skill in the art to have epoxy resin present in the core in the amount of 15-65 % by weight in order to have a laminate structure that has increased rigidity and strength.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Camie S. Thompson whose telephone number is 571-272-1530. The examiner can normally be reached on Monday-Friday 8:00 am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1786